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What is barbiturate dependence and who is at risk?

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The dependence on drugs today, particularly by young people, must concern many – doctors and nurses, social workers, lawyers and the police, and parents. The writers of the group of papers which follow, although inevitably overlapping in some respects, attempt to examine the questions raised from the particular point of view of each.[1]

When does taking a drug (generally a barbiturate) become a state of dependence is the question posed and answered by Dr Connell. He begins by setting out the series of official definitions of addiction, habituation and dependence formulated by the World Health Organization and in Britain by the Interdepartmental Committee (the Brain Committee). With these definitions as a framework he examines barbiturate dependence and abuse in the setting of current medical practice.

Definitions of addiction, dependence and habituation to drugs

The World Health Organization, since 1950, has been concerned, through the work of its Expert Committee on Drug Dependence, to clarify what is meant by addiction, dependence and habituation. Before this, the rule-of-thumb approach was to regard all drugs such as opiates which, on withdrawal from a patient lead to a physical withdrawal syndrome, as drugs of addiction and to treat these as dangerous drugs to be used with great caution and to consider other drugs, such as amphetamines, which did not seem to manifest a physical withdrawal syndrome on withdrawal, as drugs of habituation and therefore not to be regarded with such concern. These attitudes were taught to medical students and thus were reflected in the prescribing practices of general practitioners and specialists.

The WHO report (WHO, 1950) defines drug addiction as follows:

Drug addiction is a state of periodic or chronic addiction detrimental to the individual and to society, produced by the repeated consumption of a drug (natural or synthetic). The characteristics of drug addiction include: 1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; 2) a tendency to increase the dose; 3) psychic (or psychological) and sometimes a physical dependence on the effects of the drug; 4) a detrimental effect on the individual and on society.

The emphasis in this definition was on psychological dependence and upon the detrimental effect not only on the individual but also on society.

In 1957 the WHO Expert Committee (WHO, 1957) reconsidered the definition and changed point 3 (psychic and sometimes physical dependence) to 'generally a physical dependence'.

In the United Kingdom in 1961 an Interdepartmental Committee, the Brain Committee (Interdepartmental Committee, 1961), defined addiction thus:

Drug addiction is a state of periodic or chronic intoxication produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include: 1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; 2) a tendency to increase the dose, though some patients may remain indefinitely on a stationary dose; 3) a psychological *and* physical dependence on the effects of the drug; 4) the appearance of a characteristic abstinence syndrome in a subject from whom the drug is withdrawn; 5) an effect detrimental to the individual and to society.

The format of this definition is similar to the WHO definitions. However, although point 1 is the same, point 2 adds the concept of patients remaining indefinitely on the same dose, that is, maintenance doses; point 3 states that there is a psychological and physical dependence, thus removing those who are only psychologically dependent from the scope of the definition, and finally requiring a characteristic abstinence syndrome on withdrawal.

The Brain Committee (Interdepartmental Committee, 1961) also went on to define drug habituation (habit) as a condition resulting from the repeated consumption of a drug. Its characteristics include: 1) a desire (but not a compulsion) to continue taking the drug for the sense of improved wellbeing which it engenders; 2) little or no tendency to increase the dose; 3) some degree of psychological dependence on the effect of the drug but absence of physical dependence and hence of an abstinence syndrome; 4) detrimental effects, if any, primarily on the individual.

[1]This article was originally given as a lecture at the Royal College of Physicians to inaugurate CURB (course on the use and restriction of barbiturates).

Thus, the attempts of the WHO Expert Committee to widen the concept of addiction were rejected by the Brain Committee who tied themselves firmly to the concept of physical dependence.

Not to be outdone, the WHO Expert Committee made another attempt and in a further report (WHO, 1964) reexamined the whole question of addiction, habituation and dependence. The Expert Committee came out strongly in favour of using the word 'dependence', and of defining types of dependence according to the drug used. Thus, amphetamine dependence, barbiturate dependence and morphine dependence were defined. Finally, the same committee met to consider the question of evaluation and criteria for the control of drugs and adopted the following definitions for use in that context (WHO, 1969):

A drug is any substance that, when taken into the living organism, may modify one or more of its functions.

Drug abuse is persistent or sporadic excessive use of a drug inconsistent with, or unrelated to, acceptable medical practice.

Drug dependence is a state – psychic, and sometimes also physical – resulting from the interaction between a living organism and a drug, characterized by behavioural and other responses that always include a compulsion to take the drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence. Tolerance may or may not be present. A person may be dependent on more than one drug.

Definition of barbiturate dependence

The official definition of barbiturate dependence (WHO, 1964) can finally be summarized as 'a state arising from the repeated administration of a barbiturate, or an agent with barbiturate-like effect, on a continuous basis, generally in amounts exceeding therapeutic dose levels. Its characteristics include: 1) a strong desire or need to continue taking the drug; the need can be satisfied by the drug taken initially or by another with barbiturate-like properties; 2) a tendency to increase the dose, partly owing to the development of tolerance; 3) a psychic dependence on the effects of the drug related to subjective and individual appreciation of those effects; 4) a physical dependence on the effects of the drug requiring its presence for the maintenance of homeostasis and resulting in a definite, characteristic, and self-limited abstinence syndrome when the drug is withdrawn.'

Abstinence syndrome

The abstinence syndrome is described (WHO, 1964) as '. . . the most characteristic and distinguishing feature of drug dependence of barbiturate type'. It begins to appear within the first 24 hours after the addict has ceased taking the drug, reaches peak intensity in two or three days, and subsides slowly. There is at present no known agent that will precipitate the barbiturate abstinence syndrome as long as the drug is being administered.

The complex of symptoms which constitutes the abstinence syndrome, in approximate order of appearance, are anxiety, involuntary twitching of muscles, intention tremor of hands and fingers, progressive weakness, dizziness, distortion in visual perception, nausea, vomiting, insomnia, weight loss, a precipitious drop in blood pressure on standing, convulsion of a grand mal type and/or a delirium resembling alcoholic delirium tremens which may occur. It can be appreciated from this list of symptoms that a person abruptly withdrawn from barbiturates to which he has been dependent can be very disturbed indeed and that hospital treatment is usually required. The withdrawal psychosis, with visual hallucinations, confusion, disorientation and disturbed behaviour, can lead to danger to others and the withdrawal fits may become continuous as in status epilepticus and may lead to death (two days).

Treatment of the abstinence syndrome

Clearly, the treatment of barbiturate dependence should not be by abrupt withdrawal. With the onset of the abstinence syndrome admission to hospital and gradual withdrawal using pentobarbitone (Blachly, 1964; Wikler, 1968) on a graded dose regimen is the most commonly used method. Phenobarbitone is sometimes chosen (Wulff, 1959), as are chlorpromazine or chlordiazepoxide (James, 1962). Many clinicians use anticonvulsants such as diphenylhydantoin (phenytoin) to prevent withdrawal fits though the rationale for this does not appear to be established and the effect may be more that of reassuring the clinician than of preventing fits.

Clinical problems of barbiturate abuse

This short presentation would not be complete without any mention of some of the clinical problems met with in practice which may serve to highlight some of the issues that may be discussed later. Some difficulties relating to giving up barbiturates have been highlighted (Oswald and Pnect, 1965) in electroencephalographic (EEG) studies of sleep.

As with alcohol, the abuse of barbiturates may lead to a change of behaviour pattern together with disinhibition of behaviour and aggression. This may well include antisocial behaviour. It has even been suggested that the EEG may be of value in assessing those addicts who deny taking barbiturates and yet show clinical signs of possible barbiturate in-

toxication or who have a recent history of violence or behaviour change (West and Driver, 1974). 'If the EEG shows little fast activity the denial may perhaps be believed, but if fast activity is prominent one should be very sceptical in accepting the addict's denial of barbiturate usage' (West and Driver, 1974).

Although dependence on barbiturates undoubtedly occurs and at all age groups the problem has not been extensively investigated. Those investigations that have been carried out in general practice suggest that the problem is not large in terms of numbers of those dependent on high doses of barbiturates, although the studies mentioned later were completed before the full development of barbiturate abuse in young people. For instance, one study (Adams, 1966) of a north-west London practice in which no practitioner in the group prescribed barbiturates for more than a month at a time noted that during the eight-week period of the study 407 patients (84 male and 323 female) (10 000 in the practice), received prescriptions for barbiturates and 47 showed evidence of increasing the dose, although this was considered to be a conservative estimate. It was when chronic illness, whether predominantly psychological or predominantly physical, was combined with a failure to respond to specific treatment that drug dependence was particularly likely to occur.

A study of drug habituation in an urban general practice (Grant, 1969) in Scotland (2998 patients) only found two cases in which the patient was taking increasing amounts of a drug; one patient was taking amylobarbitone sodium (sodium amytal) and the other diazepam (Valium).

A study of patients in an industrial general practice (Johnson and Clift, 1968) in north Manchester (7500 patients) who received repeat prescriptions of hypnotic drugs for longer than three months noted that 74 were receiving barbiturates. (Four other general practitioners in the area gave details of prescribing practices which were similar to those of the study group.) Mild dependence was considered to be present if during interview the patient expressed concern that adequate sleep would not be possible without hypnotic drugs and that anxiety and tension would thereby develop. Severe dependence was diagnosed according to the WHO (1964) definition I have already mentioned. Only two patients were considered to be severely dependent. Ninety-one patients remained mildly dependent on hypnotics. Ten patients taking barbiturates were changed to non-barbiturates and four agreed to discontinue barbiturates at once and two agreed to discontinue non-barbiturates.

Of much more importance is the sporadic or continuous use of barbiturates by young people, particularly under 25 years of age and even more particularly in adolescence. These young people often use several drugs and obtain their barbiturates from family medicine cupboards, from general practitioners, or other doctors; from the black market; from friends or from breaking into chemists' shops.

Those young people who inject barbiturates, either sporadically (the largest number) or continuously, often do great damage to themselves at the site of the injection (abscesses) or as a result of injection into arteries instead of veins; as a consequence of using dirty needles and syringes and of the fact that they inject preparations of barbiturates which are not intended for the parenteral route and contain material which should not be injected.

Attempts on an arbitrary basis to withdraw barbiturates from those adults who have for years used two or three tablets or capsules a night and who have shown no signs of escalating the dose are often fraught with problems, and, at the worst end of the scale, may lead to a mother in a psychiatric hospital, children in care and a father in distress because of the dictatorial attitude of a doctor who has found that substitute drugs are not accepted or are not effective.

Diagnosis

The diagnosis of dependence upon barbiturates is not always clear cut but the following suggestions may provide a starting point: appearing drunk without smelling of alcohol; speech may be slurred without coherence together with drowsiness, dullness, muscular incoordination and psychomotor retardation. The pupil size is not helpful, as it may vary from constriction in the early stages of intoxication to dilatation as death approaches. Nystagmus is a useful sign. But none of these signs is pathognomonic for barbiturates, as they could be caused by other drugs which depress the central nervous system.

High barbiturate blood levels are not diagnostic of anything apart from acute barbiturate poisoning.

Urine samples are of more use in the diagnosis of prolonged abuse.

The concomitant abuse of other drugs must be investigated.

In seeking a diagnosis the doctor who is asked for barbiturates should be suspicious of the temporary resident, particularly if he is young (under 30). If in doubt and it is felt the life of a genuine addict may be in danger if he is deprived of his drug suddenly, he should give a prescription for a very small amount – say six capsules – just to tide him over. The other suspicious character is the 'epileptic', who is away from home and has left his tablets behind; he may ask for Epanutine and Nembutal (to help him sleep at night). He is only interested in the latter and adds the former to add credence to his otherwise unconvincing story. Barbiturate addicts have been known to cultivate the acquaintance of an epileptic (and even buy his NHS card).

Vulnerable groups

As I am concerned about the development of drug dependence in general, about the problem of drug taking in young people, and about methods of prevention and treatment, it is important to say something about vulnerable groups, that is, those individuals who are more likely to become attached to, or dependent on, psychoactive drugs. In this respect I would make a categorical statement: there is no one, however well adjusted, who, in extreme stress when given a potent psychoactive drug, can be sure of avoiding dependence on the drug.

So far as so-called adults are concerned, those with features of emotional immaturity, inadequacy, psychiatric illness or general maladjustment are more likely to become dependent on psychoactive drugs. The diagnosis of such personality types is difficult and time-consuming and often not within the possibilities of general practice since it may require that other members of the family be interviewed at length and because there is a tendency for suppression of the real facts in order to protect the person who is dependent as is the case in alcoholism.

There is one group, however, which stands out quite clearly and can be defined by age. This is the adolescent group. This group is striving to come to terms with sensitivities, mood swings, often with depression, and often seeking panaceas for the problems inherent in adolescence itself. This group requires the opportunity to solve the problems by experience or by counselling but not by drugs. If drugs are prescribed which temporarily solve the problem there is a great danger of dependence since, under the influence of the drug all seems comparatively well, but when the effect wears off nothing may have been learnt and no maturation may have taken place.

Conclusions

To solve the problems presented by barbiturate abuse and barbiturate dependence requires careful assessment, careful medical practice and sound preventive methods.

I have tried to indicate that the complexities may contraindicate omnipotent arbitrary decisions to withdraw barbiturates in the case of those already dependent if the dependence is only on two or three tablets or capsules a day and that such decisions may well lead to a catastrophic result. However, it is quite clear to me that it is bad medical practice to prescribe barbiturates (or any other sleeping pill) to young people under the age of 25 years unless the clinical diagnosis is such that there is a clear-cut indication for such medication. Even then short-term use under close supervision should be the rule. Most young people go through short phases of insomnia as a result of stress whether this be the stress of exams, of a broken relationship, or for other reasons. The vast majority of such young persons reestablish normal sleep rhythms without medication provided that the doctor to whom they come for help is prepared to spend some time with them to discuss the problems and to give help and reassurance, and provided the doctor concerned is able to look at the differential diagnosis of insomnia in detail and, perhaps, prescribe other more appropriate medication such as antidepressants if there is a clear-cut depressive illness.

Although it must be recognized that young people who wish to receive barbiturates from medical practitioners may be aggressive and antisocial (partly because of their use of barbiturates), and although I sympathize with the doctor in this difficult situation, it seems to me that such behaviour is better dealt with by calling in the police than by giving in to the demands for barbiturates which may well lead to more and more young people coming for such drugs when it gets around that the doctor is amenable. The practice by some medical practitioners of prescribing barbiturates to young people who claim to be temporary residents is one which concerns me very much. These young people are very plausible and manipulative but even so is there any justification for prescribing barbiturates, or amphetamines, or Mandrax to a complete stranger without knowing more about the clinical situation and without having the benefit of the experience of previous doctors who have treated the patient? So far as I am concerned it is the readiness of medical practitioners to prescribe in this way and the readiness of medical practitioners to use the prescription of such powerful drugs to save time, or get rid of, a difficult patient, whether younger or older, which makes attempts to help such people to do without drugs so difficult.

Finally, let us not forget that states of intoxication and dependence of a barbiturate type have been reported after use of non-barbiturate sedatives such as meprobamate (Equanil), glutethimide (Doriden), chlordiazepoxide (Librium), diazepam (Valium) and other drugs. Thus, it is important that when altering our prescribing practices we remain alert to the general problems of the use of sedatives and hypnotics and do not assume that there is no further danger of the development of drug dependence if we move away from prescribing barbiturates.

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